DA-AES

AES distribution amplifier

User manual

Rev. J

Nevion
Nordre Kullerød 1
3241 Sandefjord
Norway
Tel: +47 33 48 99 99
nevion.com

Nevion Support

Nevion Europe

P.O. Box 1020
3204 Sandefjord, Norway
Support phone 1: +47 33 48 99 97
Support phone 2: +47 90 60 99 99

Nevion USA

1600 Emerson Avenue
Oxnard, CA 93033, USA
Toll free North America: (866) 515-0811
Outside North America: +1 (805) 247-8560

E-mail: support@nevion.com
See http://www.nevion.com/support/ for service hours for customer support globally.

Revision history

Current revision of this document is the uppermost in the table below.

Rev.	Repl.	Date	Sign	Change description
J	8	2015-05-14	MB	Cover page update; DoC removed; no other changes to content
8	7	2012-06-12	AA / JRW	New template.
7	6	2008-07-14		Added Declaration of Conformity.
6	5	2007-10-25		New front page and removed old logo.
5	4	2007-10-05		Added Materials Declaration and EFUP
4	3	2005-10-05		Removed comment regarding Gyda override chapter 3
3	2	2004-11-16		Gyda override description corrected chapter 4
2	1	2004-11-10		Errors regarding pin numbering corrected in chapter 4
1	0	2004-10-12		Changed from Gyda to DIP in chapter 3. Changed 1:4 cross mode.
0	A	2004-04-27		Changed chapter 3
A	-	2004-01-23		Preliminary version

Contents

Revision history 2
1 Product overview 4
2 Specifications 5
3 Configuration 6
4 Connections 7
4.1 Connector module 7
4.2 Mounting the connector module 8
5 Operation 9
5.1 Module status 9
5.1.1 Front panel – status monitoring 9
5.2 Interface with GYDA and RS-422 command set 9
5.2.1 DA-AES command table 9
General environmental requirements for Nevion equipment 11
Product Warranty 12
Appendix A Materials declaration and recycling information 13
A.1 Materials declaration 13
A.2 Recycling information 13

1 Product overview

The DA-AES is a Digital Audio Distribution Amplifier. The DA-AES can be configured as either 1 input and 8 outputs or dual 1 input and 4 outputs. The Distribution Amplifier supports sample rate 15-96 kHz and has balanced inputs and outputs. The DA-AES is designed for all digital audio distribution purposes in studio, duplication and Broadcast applications.

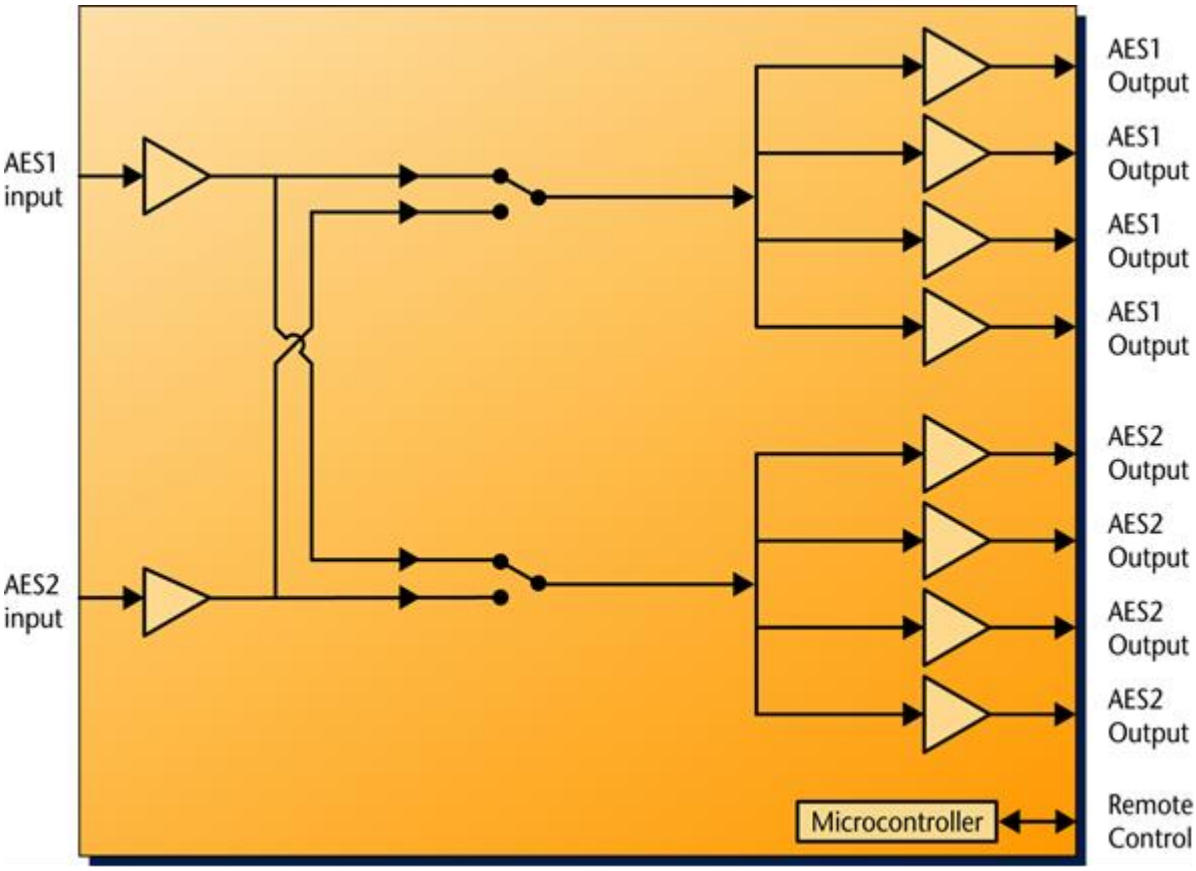

Figure 1: DA-AES - AES distribution amplifier

2 Specifications

Electrical Input:

Number of inputs:	1 or 2
Standard:	AES-3
Supported Sample Rate:	15-96 kHz
Signal Amplitude:	0.2-7Vp-p
Connector:	DB15 balanced
Impedance:	110 ohms nominal

Electrical Output:

Number of outputs:	8 or 4+4
Connector:	DB25 balanced
Signal amplitude:	4Vp-p ±1Vp-p
Impedance:	110 ohms nominal

Features:

Configurable dual 1 input to 4 outputs or single 1 input to 8 outputs

Electrical:

Power:	+5V DC / 0.5 W
Control:	Control system for access to setup and module status with BITE (Built-In Test Equipment) for use with GYDA Control System.

3 Configuration

The DA-AES supports either single 1 input to 8 outputs or dual two inputs to 4 outputs.

SW1-1	SW1-2	SW1-3	Function
Off	Off	On	AES1 input to AES1 outputs, AES2 input to AES2 outputs
Off	On	On	AES1 input to AES2 outputs, AES2 input to AES1 outputs
On	Off	On	AES1 input to AES1 and AES2 outputs
On	On	On	AES2 input to AES1 and AES2 outputs
X	X	Off	Gyda controls the setting

DIP switch SW1-4 is reserved for future options.

When DIP switch 1-3 is on, LEDs should blink when DIP switch 1-1 or 1-2 is changed.

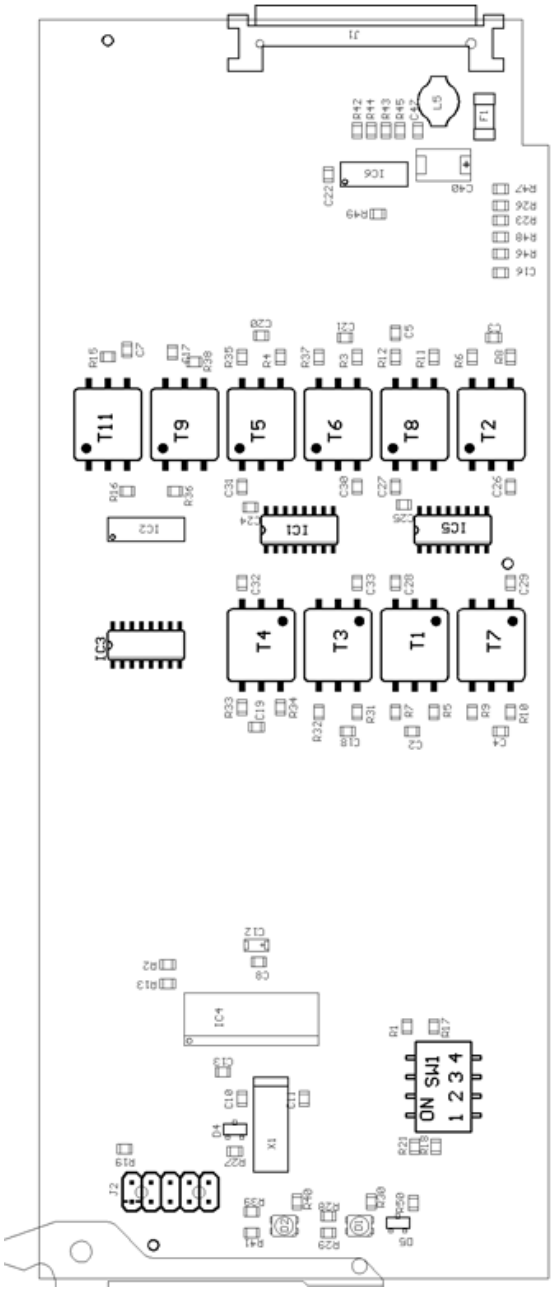

Figure 2: DA-AES board layout

4 Connections

4.1 Connector module

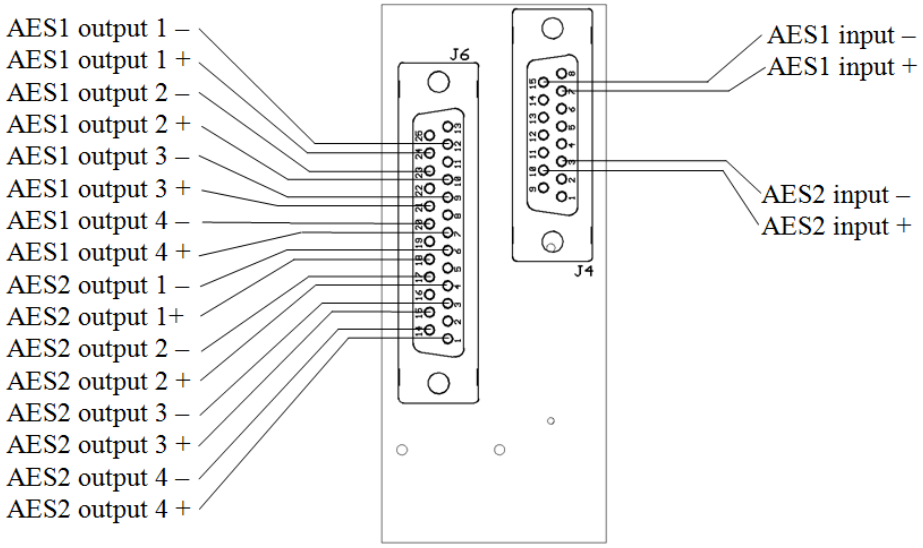

Figure 3: Overview of the AES-C1 connector module

The DA-AES has a dedicated connector module: AES-C1. This module is mounted at the rear of the sub-rack. The module is shown in Figure 3. J4 is the input DSUB connector, while J6 is the output connector.

J4:

Function	Pin
AES channel 1 positive input (AES1 +)	7
AES channel 1 negative input (AES1 –)	15
AES channel 2 positive input (AES2 +)	10
AES channel 2 negative input (AES2 –)	3
Ground	2, 5, 8, 11, 14

J6:

Function	Pin
AES channel 1 positive output 1	24
AES channel 1 negative output 1	12
AES channel 1 positive output 2	10
AES channel 1 negative output 2	23
AES channel 1 positive output 3	21
AES channel 1 negative output 3	9
AES channel 1 positive output 4	7
AES channel 1 negative output 4	20
AES channel 2 positive output 1	18
AES channel 2 negative output 1	6
AES channel 2 positive output 2	4
AES channel 2 negative output 2	17
AES channel 2 positive output 3	15
AES channel 2 negative output 3	3
AES channel 2 positive output 4	1
AES channel 2 negative output 4	14
Ground	2, 5, 8, 11,13, 16,19,22,25

4.2 Mounting the connector module

The details of how the connector module is mounted, is found in the user manual for the sub-rack frame FR-2RU-10-2.

This manual is also available from our web site: http://nevion.com

5 Operation

5.1 Module status

The status of the module can be monitored in two ways:

1. GYDA System Controller (optional).
   GYDA System Controller is a separate module giving detailed information on the card status.
   The GYDA controller is described in a separate user manual.
2. LEDs at the front of the sub-rack.
   LEDs are mounted on the module itself.
   The functions of the LEDs are described in sections 5.1.

5.1.1 Front panel – status monitoring

The status of the module can be easily monitored visually by the LEDs at the front of the module. The LEDs are visible through the front panel. The LED on top tells if the DA-AES is ok or not (green LED means ok – red is alarm). The second and third LED tells if there is an AES stream present on one or both input channels. When data stream is present, the LED is green. If there is no data stream, the LED is red. The functions of the different LEDs are summarized in the table below.

Diode \ state	Red LED	Yellow LED	Green LED	No light
Status	Module is faulty		Module is OK Module power is OK	Module has no power
Signal on ch1	Signal not present		Signal present	
Signal on ch2	Signal not present		Signal present	

5.2 Interface with GYDA and RS-422 command set

All commands follow the flashlink protocol and can be used for direct control access to the modul. The control system can either be a GYDA-SC or a third-party control system with integrated flashlink protocol. The module can also be manually controlled with a VT100 compatible terminal program.

The protocol can be found on our web page; http://nevion.com

5.2.1 DA-AES command table

Command	Response	Comment
?	*See protocol description*	The *"hello"* command
info	Module status information	
reset	OK	Set input configuration to DIP switch setting
set norm8	OK	Set AES1 input to AES1 and AES2 outputs
set norm4	OK	Set AES1 input to AES1 outputs and AES2 input to AES2 outputs
set cross8	OK	Set AES2 to AES1 and AES2 outputs
set cross4	OK	Set AES1 input to AES2 outputs and AES2 input to AES1 outputs

General environmental requirements for Nevion equipment

1. The equipment will meet the guaranteed performance specification under the following environmental conditions:
   - Operating room temperature range: 0°C to 45°C
   - Operating relative humidity range: <90% (non-condensing)

2. The equipment will operate without damage under the following environmental conditions:
   - Temperature range: -10°C to 50°C
   - Relative humidity range: <95% (non-condensing)

Product Warranty

The warranty terms and conditions for the product(s) covered by this manual follow the General Sales Conditions by Nevion, which are available on the company web site:

www.nevion.com

Appendix A Materials declaration and recycling information

A.1 Materials declaration

For product sold into China after 1st March 2007, we comply with the “Administrative Measure on the Control of Pollution by Electronic Information Products”. In the first stage of this legislation, content of six hazardous materials has to be declared. The table below shows the required information.

組成名稱 Part Name	Toxic or hazardous substances and elements					
	鉛 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr(VI))	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
DA-AES	O	O	O	O	O	O
O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006. X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.						

This is indicated by the product marking:

A.2 Recycling information

Nevion provides assistance to customers and recyclers through our web site http://www.nevion.com/. Please contact Nevion’s Customer Support for assistance with recycling if this site does not show the information you require.

Where it is not possible to return the product to Nevion or its agents for recycling, the following general information may be of assistance:

- Before attempting disassembly, ensure the product is completely disconnected from power and signal connections.
- All major parts are marked or labeled to show their material content.
- Depending on the date of manufacture, this product may contain lead in solder.
- Some circuit boards may contain battery-backed memory devices.